Template for ISB Documentation of Stressors

A. General Information:

1. Name or Location of Example/Approach: General

2. Literature/Citations Used: Vinebrooke, R.D., K.I. Cottingham, J. Norberg, M. Scheffer, S.I. Dodson, S.C. Maberly, and U. Sommer. 2004. Impacts of multiple stressors on biodiversity and ecosystem functioning: the role of species co-tolerance. Oikos 104:451-457

3. Reviewer(s): V. Resh

B. Specific Questions:

1.What stressors are considered? Temperature elevations, acidification, uv radiation, eutrophication, toxins, predation on phytoplankton and zooplankton

2. Are stressors categorized? If so, how? As above

3. Are the relations between stressors and management objectives modeled, and if so, how? A conceptual model is developed based on co-tolerance to different variables. If tolerances are un related or correlated

4. If stressors are prioritized, describe the general approach. Evidence suggests that the effects of a stressor is less at the ecosystem level than at the species level. Tolerant species replace less tolerant ones and ecosystem function is maintained. Positive co-tolerance results in better ecosystem function than opposite co-tolerance. The key is that certain species traits are effected.

5. How might this approach be relevant to Bay Delta? Each stressor has known information on species traits. If this approach is used, positive and opposite responses of taxa can be developed for the Sacramento River gradients. This could lead to prioritization based on the different traits affected.

6. Follow up regarding additional questions/literature review/etc?